

## Status of P907 Beam

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29 Sept. 2001

**Funding** - Primary and secondary beam removal/reinstallation now included in SY120 project (approved by Marriner), of which I am the Project Manager. Includes huge shield pile removal/reinstallation.

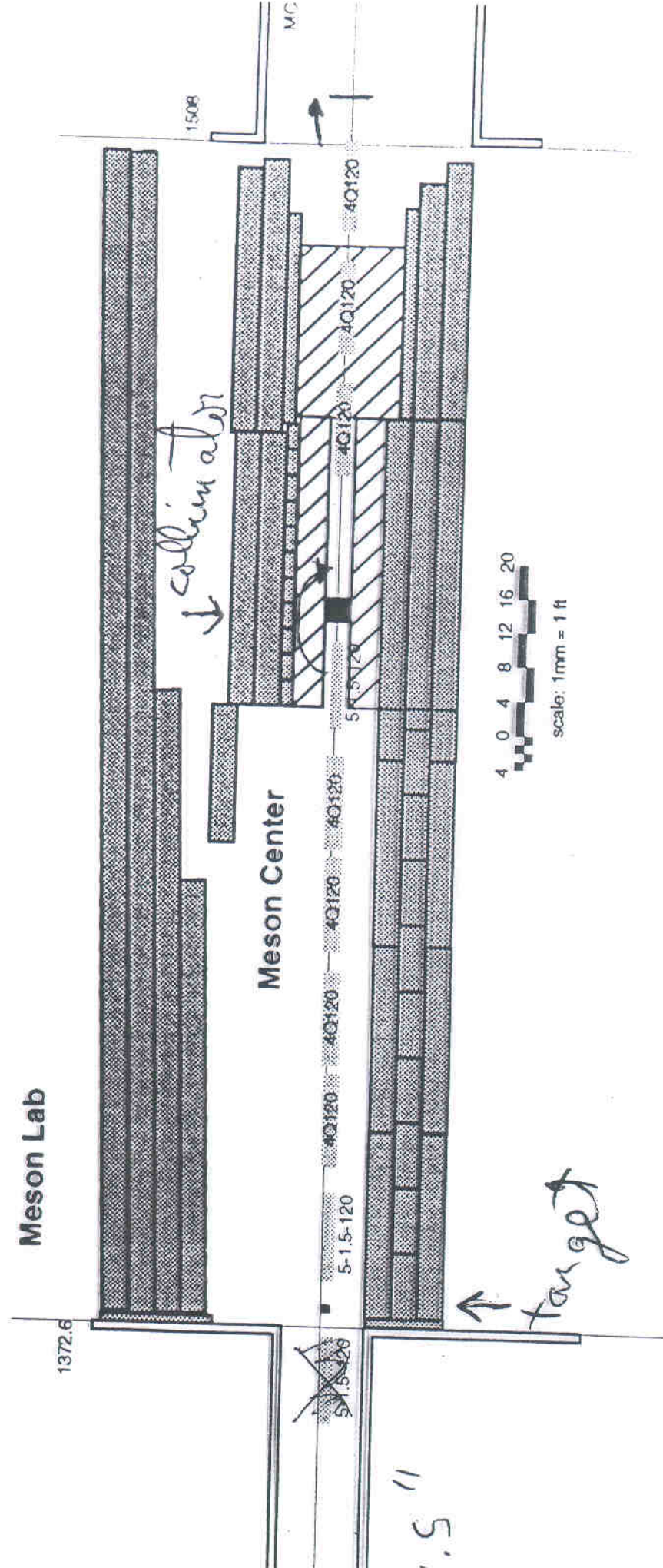
**Optics** (Hartouni design): See following sketches

**Schedule:** still have goal of commissioning beam to Meson in March 2002  
rebuilding Enclosure C of primary beam delayed from Nov. '01 til starting mid-Jan. '02 because of lack of progress in refurbishing old rusty EPB dipoles needed to replace the cryogenic Left Bend  
should, and can, start removing the huge shield pile for rebuilding the primary and secondary beam as soon as we are approved

**Cost Estimate:** { Removing/reinstalling shield pile = \$220K (Barnes & Mascione)  
Remove 11 magnets and install 11 different magnets ~~\$430K~~  
install 4 recycled power supplies for quadrupoles ?  
pull new DC cables from 4 quadrupole supplies ?  
build new stands for the magnets at 80" off floor ?  
beam vacuum system ?  
target wheel (?) construction ?  
controls for new PS's, collimator, and target wheel ?

My WAG is that the ?'s above will add up to ~\$150K +- 50

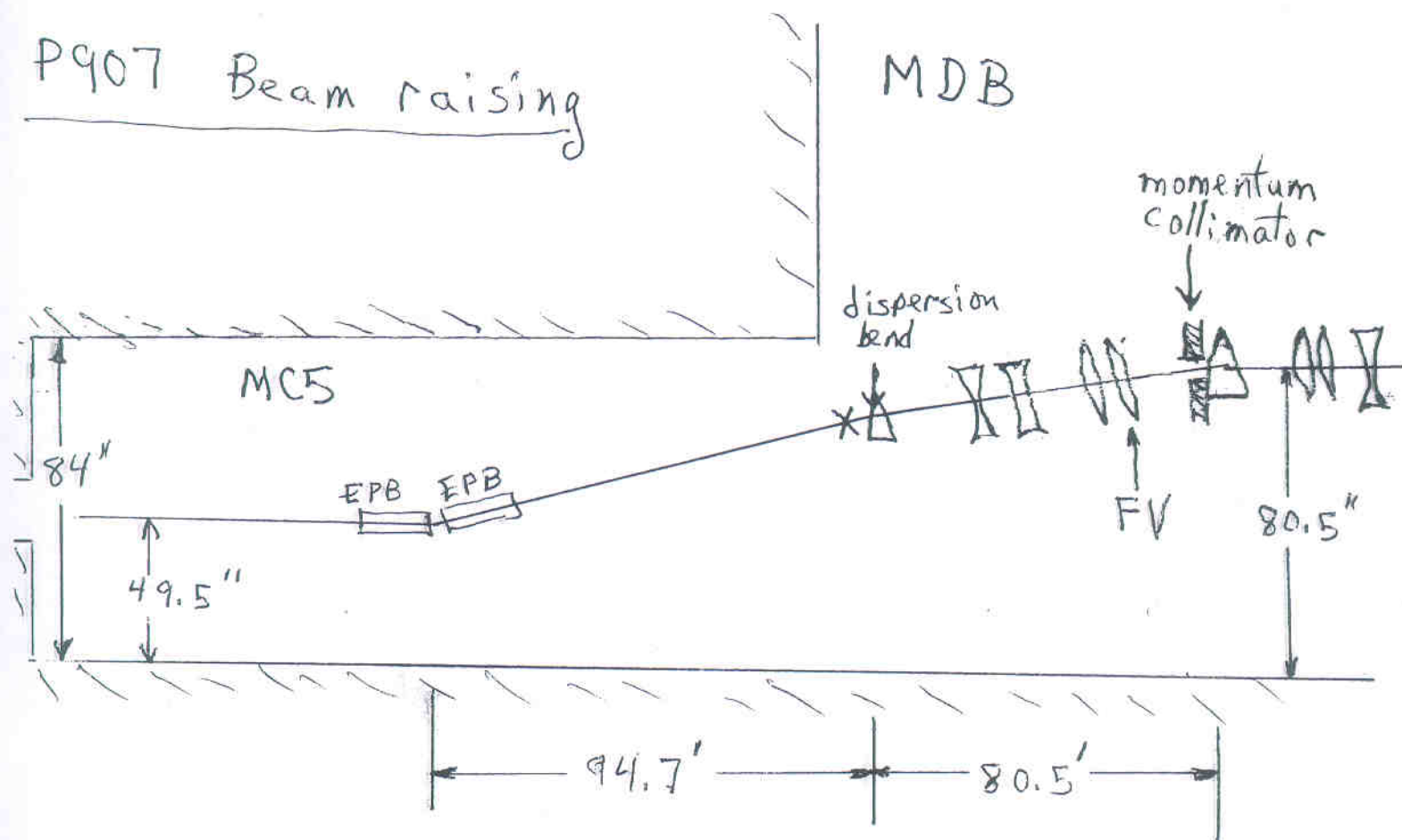
19: Layout of proposed Meson Center beam line in enclosure MC7



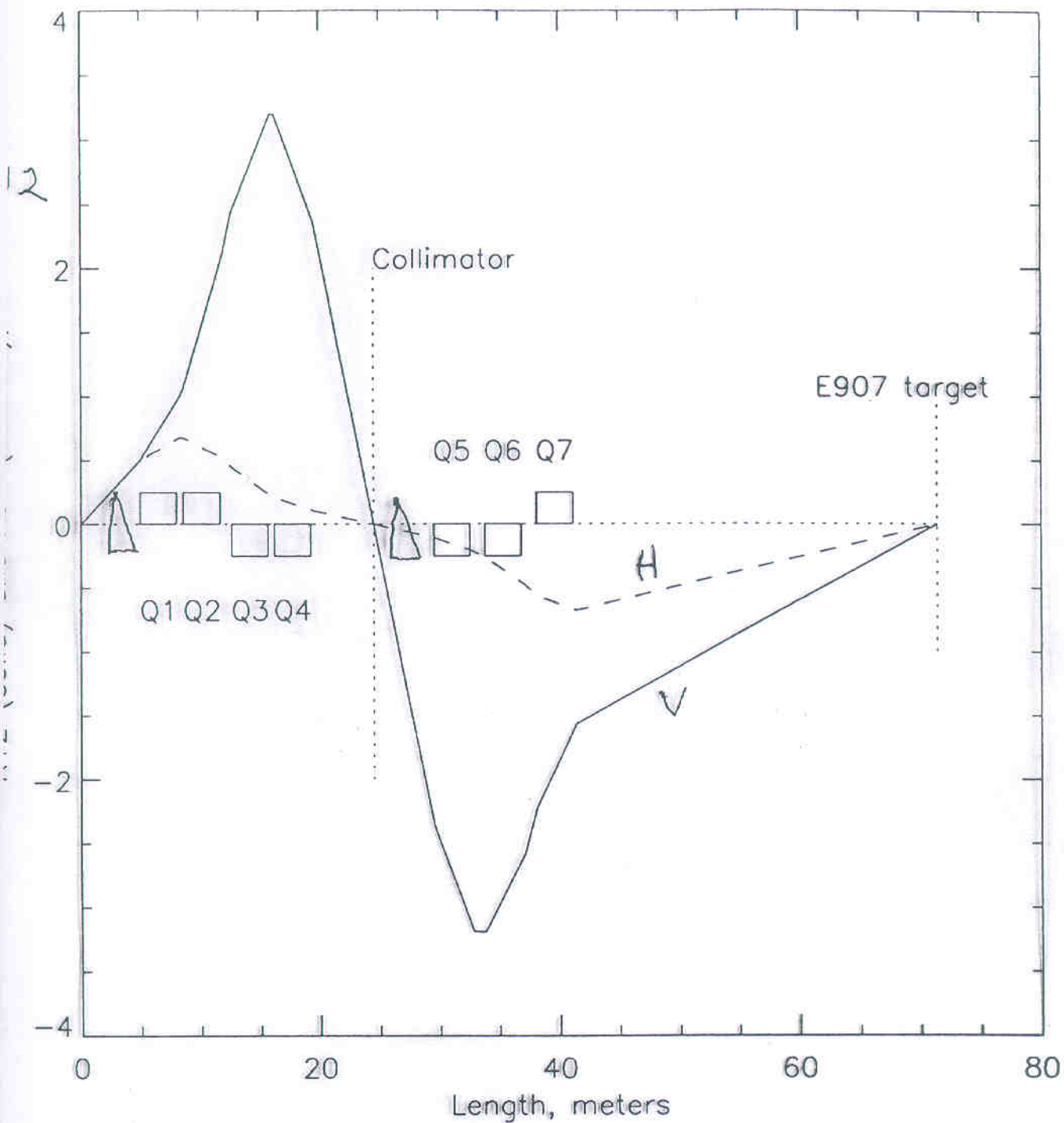
20: Layout of secondary beamline proposed for Meson Center.

requirements

# P907 Beam raising







of secondary beamline proposed for Meson Center with T  
sed.

momentum recombination if  $\sum R_{12i} \delta\theta_i = 0$

## To Do - soon

(I will take responsibility for getting this list done, including bugging other people for help)

- Revise primary beam focusing quads to get proper spot size on our primary target  
**need from Hartouni:** what V and H spot sizes would you like to keep acceptance good?
- can we achieve the NuMI beam spot size of 1.4 mm (V) x 0.7 (H) (1 sigma) with quads so far from the target?
- locate the needed magnets: 4 EPB dipoles, 7 4Q120s  
(they are available, but may have to pull them out of abandoned beamlines - a rigging cost)
- find 4 recycled power supplies for the quads
- design & build stands for the magnets at 80" off floor  
2 month lead time to build, must design NOW
- shielding assessment:  
can we take  $\sim 1E11$  protons every 3 seconds?  
we have lost 31" of vertical shielding because of the beam rising
- redesign the shield pile because of our 31" elevation increase in the secondary beam elements
- decide where to put a 1 mm x 1 mm pinhole collimator to reduce intensity from  $1E11$  to  $1E6$ /spill for NuMi phase
  - several pinhole collimators are available
- design and build "target wheel" (?)  
**I need specs from the rest of you**
- find appropriate Cerenkov heads and buy beam pipes  
**I need your aggressive input on this matter**  
Gordon Koizumi is your contact on Cerenkov heads available

THIS IS AN IMPOSING LIST OF PLANNING JOBS TO BE DONE!!!!

- get extraction tuning shifts



Decay Pipe upstream window  
4" diameter Titanium, 3 mil thick

198"

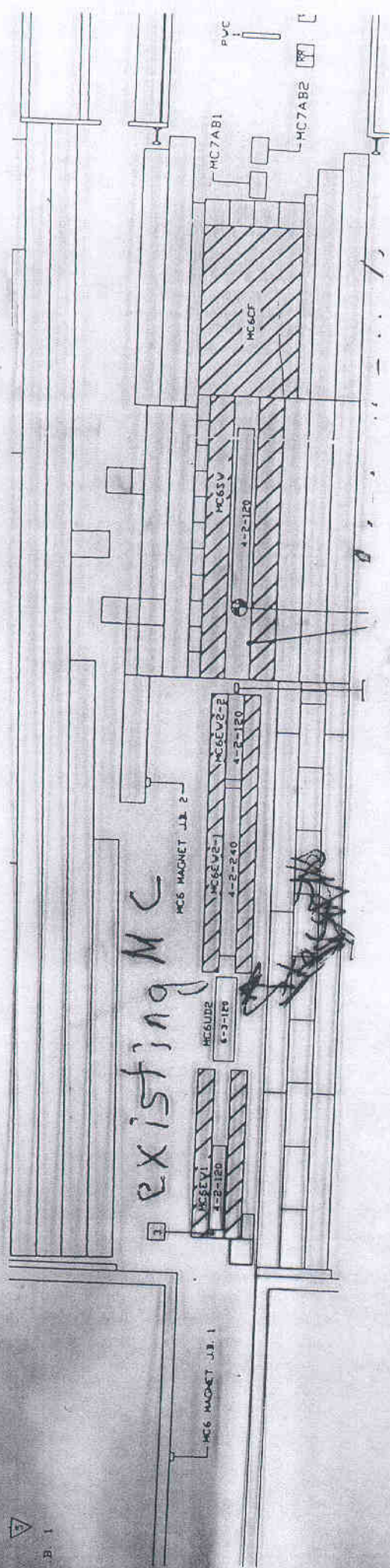
12.75 O.D

10.75 O.D

~44"

222.625"

24"





9: Layout of proposed Meson Center beam line in enclosure MC7

